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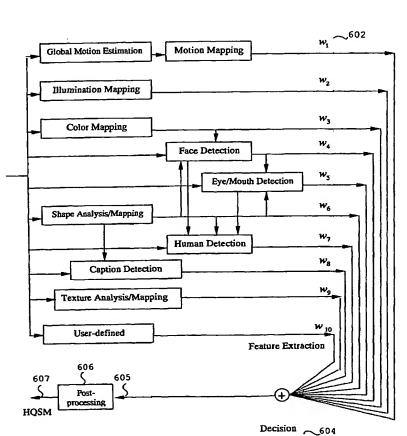
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(54) Title: A METHOD FOR GENERATING A QUALITY ORIENTED SIGNIFICANCE MAP FOR ASSESSING THE QUALITY OF AN IMAGE OR VIDEO



(57) Abstract: A method for generating a quality oriented significance camp for assessing the quality of an image or video, comprising the steps of extracting features of the image or video, determining a perceptual quality requirement of at least one extracted feature and integrating the extracted features and the perceptual quality requirement of the at least one extracted feature to form an array of significance level values, thereby generating the quality oriented significance map.

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CTA	ASSIFICATION OF SUBJECT MATTER				
	606T 7/00, G06T 7/20				
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Electronic	data base consulted during the international search (name	of data base and, where practicable, search	ch terms used)		
EPOD	OC, PAJ, WPI				
C. DO	CUMENTS CONSIDERED TO BE RELEVANT				
Category	Citation of document, with indication, where appropriate,	of the relevant passages	Relevant to claim No.		
A	WANG, Z. et al. A Universal Image Quality Index, IEEE Signal Processing Letters, vol. 9, no. 3, march 2002 the whole document.				
A	WO 1999/021173 (BRITISH TELECOLIMITED COMPANY) 29 April 1999 (2) the whole document.	1-3, 11-15			
A	US 2002 / 0126891 A1 (OSBERGER, 12 September 2002 (12.09.2002) the whole document.	1-12			
A	EP 1109132 A2 (EASTMAN KODAK C (20.06.2001) the whole document.	1-12			
	<u> </u>				
Fu	rther documents are listed in the continuation of Box C.	See patent family annex.			
"A" docu consi "E" earlie filing "L" docu cited speci "O" docu mear "P" docu the p	ment published prior to the international filing date but later than riority date claimed	"T" later document published after the internation date and not in conflict with the application the principle or theory underlying the inv. "X" document of particular relevance; the classification considered novel or cannot be considered when the document is taken alone "Y" document of particular relevance; the classification considered to involve an inventive step with combined with one or more other such dispension of the same patent farms. "document member of the same patent farms".	on but cited to understand ention imed invention cannot be to involve an inventive step imed invention cannot be when the document is ocuments, such combination art mily		
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/SG 2002/000259

C (Continu	ation). DOCUMENTS CONSIDERED TO BE RELEVANT	7239
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Α	WANG, Z. et al., No-Reference Perceptual Quality Assessment of JPEG Compressed Images, IEEE International Conference on Image Processing, 2002 the whole document.	1-12
Α	US 6389072 B1 (TZOU, Shing-Chi, et al.) 14 May 2002 (14.05.2002) abstract, column 4, lines 7-33, column 6, lines 18-64, fig. 2.	1, 3
	·	
l	TSA/210 (continuation of second sheet) (July 1998)	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No. PCT/SG 02/00259

Patent document cited in search report		t document cited search report	Publication date	Patent family member(s)			Publication date
EP	A	1109132	2001-06-20	US	В	6671405	2003-12-30
D.F	^	1103-0-		JP	A	2001202522	2001-07-27
US	A	20020126 891		<u> </u>		none	
บร	В	6389072	2002-05-14	JP	T	2002534862T	2002-10-15
03		03020.2		EP	A	1057342	2000-12-06
				WO	A	0040030	2000-07-06